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SUPPLEMENT

TO

A MEMOIR

CONCERNING THE

FASCINATING FACULTY

WHICH HAS BEEN ASCRIBED TO

of THE RATTLE-SNAKE,

AND OTHER

AMERICAN SERPENTS.

IN A

LETTER

TO PROFESSOR ZIMMERMANN, of BRUNSWICK,
IN GERMANY.

— “there is no branch of natural history in the investigation of
“ which even men of science have more prominently discovered their ignor-
“ ance and weakness than in that of the serpents. Here, even a Linnæus,
“ forgetting the cautious dignity which became the character of him who
“ was destined to reform the science of nature, seriously relates those tales
“ which ought to have been confined to the wigwam of the savage, or to
“ the cabin of the most uninformed hunter.”

PHILADELPHIA, FEBRUARY 12, 1800.

DEAR SIR,

I HAVE never yet received the translation which you have made of my "Memoir concerning the Fascinating Faculty which has been ascribed to the Rattle-Snake, and other American Serpents." I feel flattered by your kind notice of that little production, one of my first essays in natural history, and one to which, I confess, I devoted a good deal of attention. By transferring my sentiments on the subject which I have touched, into the language of your country, you have, no doubt, contributed to draw the attention of the learned to the discussion of the question, whether serpents are endued with the power of fascinating other animals.

I DID not, before this day know, that our learned friend Professor Blumenbach, of Gottingen, had published some *Remarks* on the memoir, in Voigt's *Magazin für den neuesten zustand der Naturkunde*. Part II. I have not seen the Magazine, but have met with a translation of the Professor's paper in the *Philosophical Magazine**, published in London, by Mr. Alexander Tilloch. In this Letter, I am going to trouble you with some farther remarks, which you are at liberty to make use of, in any way you may think proper.

I SHALL not pursue the Professor in the precise order of his remarks. I shall first take notice of his defence of that passage in his *Manual of Natural History*†, which I particularly examined in my memoir, and which he *seems* to think I have criticised with somewhat of severity. The following are Mr. Blumenbach's words, as I have translated them in the memoir:
 “ That squirrels, small birds, &c. voluntarily fall from trees into the jaws of the
 “ rattle-snake, lying under them, is certainly founded in facts: nor is this much

* For December, 1798.

† Handbuch der Naturgeschichte.

“ to be wondered at, as similar phæno-
 “ mena have been observed in other species
 “ of serpents, and even in toads, hawks,
 “ and in cats, all of which, to appearance,
 “ can under particular circumstances, en-
 “ tice other small animals, by mere stead-
 “ fast looks. Here the rattles of this
 “ snake (the rattle-snake) are of peculiar
 “ service; for their hissing noise causes the
 “ squirrels, whether impelled by a kind of
 “ curiosity, misunderstanding, or dreadful
 “ fear, to follow it, as it would seem, of
 “ their own accord. At least,” continues
 Mr. Blumenbach, “ I know from well-in-
 “ formed eye-witnesses, that it is one
 “ of the common practices among the
 “ younger savages to hide themselves in
 “ the woods, and by counterfeiting the
 “ hissing of the rattle-snake to allure and
 “ catch the squirrels*.”

ON this passage I made some remarks,
 which were brought together, under three
 distinct heads. I observed, 1st. That “ the
 “ faculty of fascinating is by no means
 “ peculiar to the rattle-snake, but is at-

* See a Memoir, &c. pages 46 and 47.

“tributed as extensively to the black-
 “snake, and other serpents, which are
 “not furnished with the crepitaculum, or
 “set of bells.” 2dly. That “some persons,
 “who have seen the rattle-snake in the
 “supposed act of charming, assure me, that
 “the reptile did not shake its rattles, but
 “kept them still;” and, lastly, I was inclin-
 ed to think, that there was no solid founda-
 tion for the story upon which, in part
 at least, Mr. Blumenbach has founded his
 theory.

It is, certainly, the prevailing opinion
 in this country, that the black-snake and
 other serpents, as well as the rattle-snake,
 are endowed with the faculty of fascinat-
 ing, or charming other animals. It is well
 known, that none of the serpents except
 the different species of *crotalus* are furnish-
 ed with the *crepitaculum caudæ*, or rattle,
 and no attempt has been made to point
 out the difference (if there be a difference)
 in the modes of fascinating employed by
 these several serpents, with the excep-
 tion of the remark made by a few of the
 Indians and Whites, that the rattle-snake

charms with its rattle*. But we shall afterwards see, that this is by no means the general opinion among the Indians or whites.

SINCE the printing of my memoir, I have been assured by a very intelligent person†, who, living in a part of the country which abounds in rattle-snakes, has had many opportunities of attending to the manners of these serpents when watching for their prey, that at such time the rattle-snake does not move his rattle, but lies still. This is a confirmation of the fact mentioned in my memoir. “It is very “probable,” however, as Mr. Blumenbach observes, “that the case here may be altered by circumstances:” that is, that the reptile whilst endeavouring to obtain its prey, sometimes shakes its rattle, and sometimes keeps it still. I am now, however, fully persuaded, that the latter is the general case; and the more so, because it seems to be ascertained, that the rattle-snake sel-

* See a Memoir, &c. pages 14 and 15.

† Mr. Samuel Preston. “Dr. Mead (says Mr. Preston) supposes the rattle on their tail to be useful for that purpose (viz. charming), but he is much mistaken, as I have actually seen them engaged in the process a number of times. They do not make any noise with their rattle; they lie perfectly still, with an open mouth, and sparkling eyes.” Letter to me, dated Stockport, August 7th, 1798.

dom shakes his rattle, unless when he is irritated.

IF, then, this serpent does not always, nor even generally, shake his rattle, at the time he is watching for his prey, it is, I think, somewhat unphilosophical to ascribe so much to the “hissing noise” of the instrument as Mr. Blumenbach has done. “This lazy animal, when lying on the ground, might certainly,” says the Professor, “employ that singular organ for enticing animals, as well as the ceraastes employs its horns for the same purpose, at least according to common report.”

I WILL readily allow, that if the ceraastes of Egypt is capable of charming by means of the horns upon his head, the rattlesnake might, without much stretch of the imagination, be supposed capable of charming by means of the horny bells upon his tail. But here Mr. Blumenbach attempts the solution of one difficulty by having recourse to another difficulty: or, rather, he seems disposed to cut the knot of fascination, as it respects the rattlesnake, by

means of a story, which has never been proved to be a fact, and which, I cannot but think, is one of the many improbable tales in natural history. I know it is functioned by Pliny* and Solinus. But, alas! how many hundred anile stories has Pliny told; and who does not know that Solinus is often the servile copier of Pliny?

IN the discussion of curious questions like the present, I can feel pleasure even in furnishing my opponent with implements, with which to defend himself. With this disposition of mind, I will here mention a supposed fact, which is a good deal similar to that related of the cerastes. I do not doubt that it is as worthy of belief. There inhabits the lakes and rivers of many parts of North-America, a very curious species of efox, or pike, which is commonly known by the name of the gar-fish, or bill-fish. The upper jaw is lengthened out into a long bony rostrum, or protuberance, which has given it the name of

* "*Ceraftis corpore eminere cornicula sæpe quadrigemina: quorum motu, reliquo corpore occultato, sollicitant ad se aves.*" C. Plinii Secundi *Naturalis Historiæ* Lib. VIII, cap. xxiii.

bill-fish. Although this fish is known to live almost entirely upon other fish, to which he proves very destructive, we are told, that the gar hides himself in the reeds in such a manner, that nothing but the curious rostrum, which he thrusts out of the water in a perpendicular position, can be seen. Different kinds of birds, which come to rest themselves upon the reeds, mistaking the fish's bill for a reed, or dry piece of wood, perch upon it also. He then opens his mouth, and generally makes an immediate prey of the misguided bird.

THIS story is related by a very respectable writer, Father Charlevoix, who adds a circumstance which I must not omit to mention, especially as it would seem to show, that there is some hidden (we will call it a *fascinating*) virtue in the gar's bill. The Indians say, that the sharp teeth which are distributed along the edges of this instrument are a "sovereign remedy against
 " the head-ach, and that pricking with one
 " of these teeth where the pain is sharpest,
 " takes it away instantly*."

* A Voyage to North-America, Vol. I, pages 117 and 118. English Translation.

BUT, to be serious. As most, if not all, animals are furnished with an organ of hearing, so it is not improbable, that different sounds, particularly the sounds of musical instruments, have something charming or attractive to certain species of animals. Passing by the stories that are told of the *Trichechus Manatus*, or sea-cow, the common mouse, and some other animals, I will here mention a fact related by Dr. Odier, on a very respectable authority; and I relate it the more confidently because it has been confirmed to me by several persons of credit. The iguana* of the West-Indies is said to be so fond of music, that at the sound of an instrument, this ugly-looking lizard becomes almost motionless, and is easily taken by a noose.†

* *Lacerta Iguana* of Linnæus.

† See *Epistola Physiologica, Inauguralis, de Elementariis Musicæ Sensationibus*. Nota 32. Edinburgi: 1770. It were much to be wished, that some ingenious man would favour us with a memoir concerning the influence of music upon different animals. Some interesting materials for such a work are to be found scattered through a number of writers, both ancient and modern. But new materials might readily be collected, since it would not be a difficult task to make experiments. Much curious physiological knowledge would result from such an inquiry. And I greatly mistake if the inquiry would not somewhat tend to diminish the quantity of our prejudices against animals that are unquestionably innocent. Should it have this effect, how great would be the gain to a benevolent mind! Nurtured among prejudices of different kinds, we are at once miserable and unjust. I must confess, that

BUT I must return to Mr. Blumenbach.
 “ I know, says he, from well-informed eye-
 “ witnesses, that it is one of the common
 “ practices among the younger savages to
 “ hide themselves in the woods, and by
 “ counterfeiting the hissing of the rattle-
 “ snake to allure and catch the squirrels.”
 After quoting this passage, I observed, in
 my memoir, that “ I have inquired of In-
 “ dians, and of persons who have resided,
 “ for a considerable time, among the In-
 “ dians, and they appear to be as ignorant
 “ of the circumstance as I am myself.”
 I continued, “ I am inclined to think that
 “ Mr. Blumenbach has been imposed
 “ upon,” or, perhaps, that a circumstance
 which I have related may have given rise
 to the story*. Mr. Blumenbach has since
 informed me by letter, and now informs
 the public in his *Remarks*, that he received
 his “ information from Major Gardner,
 “ who, with his family, resided many

I have dropped some of my prejudices against the amphibia (See a Memoir, &c. page 45. note.) since I have learned, that the iguana is pleased with the music of the West-Indians, and that a little garden-lizard listened, “ with a breathless attention,” to the sound of a lady’s piano-forte. For a very interesting instance of this kind, see the Analytical Review, for January, 1783.

* See a Memoir, &c. pages 48 and 49.

“ years in East-Florida. He is, says the Professor, “ a very intelligent naturalist, “ an accurate observer, and certainly “ would be very far from imposing upon “ me.”

I KNEW not, when I printed my memoir, from whom Mr. Blumenbach received his information. It was not, however, unnatural for me to suppose, that he had been “ imposed upon,” because I well know, that some of the most respectable naturalists and historians of Europe have often been most grossly deceived, by travellers who have visited this country: hence the many tales, and scandalous stories, which crowd and deform some of the works of your most celebrated writers. Such tales and stories are the following, that the Indians have no beards; that they have very small appetites; that they are greatly addicted to the “antiphyfical vice;” that *none* of the tribes knew any thing of the use of salt, before the Europeans came among them; that they cannot carry their arithmetic beyond the numeral three; &c. &c. &c.

I HAVE lately made farther inquiries of the Indians concerning the stratagem which, Mr. Blumenbach says, the younger savages employ to allure to them squirrels. I can learn nothing concerning it. I am still disposed to think, that there is but a slender foundation for the story. I am certain, that it is not a *common* practice among the Indians. Persons who have resided, for many years, among our northern and western Indians have never heard of it. Neither have intelligent traders and interpreters from the very country in which Major Gardner resided. Anxious to ascertain the truth, I shall extend my inquiries, and should I learn, that the Indians do actually employ the stratagem, I shall endeavour to be the first to inform Mr. Blumenbach of the success of my research.

I SHALL conclude this part of my letter with two observations : viz. 1st. If it be a fact, as I have asserted, that the rattlesnake, while watching for his prey, seldom moves his rattle, the story related by Major Gardner must, independently on any other facts, appear highly improbable.

2dly. Even admitting the fact, that the rattle-snake does shake his rattle while employed in the supposed act of charming, I think the greater number of the favourers of the existence of a fascinating quality in this serpent, ought, upon a careful consideration of the subject, to give up Mr. Blumenbach's explanation of the business. They tell you, that the bird or squirrel is often seen precipitating itself from the top of a lofty tree into the jaws of the serpent, lying at the bottom. Now is it likely, that the noise of the rattle can be distinctly heard at the distance of sixty, eighty, or an hundred feet, in a forest where all else is not silence ; where rooks, and ravens, and jays, wood-peckers, and many other species of birds, utter their various cries or notes, which are mixed, and often confounded, with the noise of tree-frogs, locusts, and an hundred other animals? I think, Sir, you will admit with me, that it is very improbable, if not impossible, that the rattle could affect the bird at such a distance ; and I am disposed to believe, that, after reading the preceding observations, you will not think Mr. Blumenbach's system

is so capable of being maintained as that ingenious gentleman seems to suppose it is.

MR. Blumenbach, in taking notice of my theory of accounting for the supposed fascinating power of serpents, informs us, that with this method of explaining the phenomenon he has been acquainted since 1785, from an Essay by Professor Michaëlis, in the *Gottingen Magazine*, for January of that year. In justice to Dr. Michaëlis, I shall here quote his words, as they are given by Mr. Blumenbach. “ Others believe “ that it is owing merely to the care of “ the old ones for their young, which “ throw themselves between the latter and “ their enemies, and by these means become a prey to them. One of my “ friends, Mr. David Colden, at Flushing, “ an amateur of natural history, and son “ of Governor Colden, whose service to “ science is so well known, assured me, “ that he had several times seen birds fascinated by snakes, but always found the “ nest of the bird either with eggs or young “ ones in the neighbourhood, which made

“ the spectators give up the idea of fasci-
 “ nation. But, Mr. Michaëlis adds, I
 “ know some instances where no nest
 “ could be in the neighbourhood, and
 “ where, though the snake was at first
 “ at a great distance from the bird, it
 “ nevertheless fell towards it.”

FROM this quotation, it appears, that I was not the first person who endeavoured to explain the supposed fascinating power, *somewhat* in the manner I have done. I have not asserted that I was. But I certainly neither did nor could borrow the explanation from Mr. Michaëlis, whose “ valuable essay,” as Mr. Blumenbach calls it, I have never yet seen. My theory, which every day’s inquiry serves to strengthen, was the result of a great deal of attention to the subject. And I have enjoyed as many opportunities of investigating the truth as Mr. Michaëlis did. With respect to that ingenious gentleman, I should have allowed him more merit had he adopted Mr. Colden’s explanation; and I can allow him very little for rejecting it, merely because, in some instan-

ces, no nest could be found in the neighbourhood, and because “though the snake was at first at a great distance from the bird, it nevertheless fell towards it.” It surely does not follow, because no nest could be found, that none existed. The school-boy well knows the difficulty of discovering the nests of many species of birds: and the naturalist, who ought to be acquainted with the arts employed by these animals to conceal, from man and other enemies, their nests, should make still greater allowance for the difficulty of discovering these nests. As to Mr. Michaëlis’s other assertion, that “though the snake was at first at a great distance from the bird, it nevertheless fell towards it,” I will not positively deny it, until I learn whether that gentleman has himself witnessed any thing of the kind. But, in the meanwhile, I must say, that I have no reasons to think, that I have been precipitate in advancing what I have advanced on this subject, in my memoir.

I do not perceive that Mr. Blumenbach has made any other attempt to controvert

my theory, except in so far as he has mentioned Mr. Michaëlis's two observations just noticed. On the contrary, in the new edition of his *Manual*, the Professor has quoted my memoir, and expunged the story about the ringing of the serpent's tail*. Of Mr. Michaëlis's essay, he makes no mention. And here, before I adduce any additional facts in support of my explanation, I cannot forbear to observe, that I do not think Mr. Blumenbach has done justice to this part of my memoir. In particular, the fine fact communicated to me by the late Mr. Rittenhouse, of which he has made no mention, is worth a whole volume of speculations on the subject. I doubt not, that my learned Gottingen friend had as high an opinion of the fact as I have.

BEFORE I proceed any farther in my reply to Mr. Blumenbach, I beg leave to trouble you with some facts, which are a good deal similar to those related in my memoir. They, certainly, favour the system which I have advanced. Inde-

* Handbuch der Naturgeschichte, p. 242. Gottingen: 1797.

pendently, however, on their connection with the subject of the memoir, they appear worthy of preservation: for they serve to illustrate, in some degree, the history of the manners and instincts of serpents, a subject which has been too much neglected by naturalists.

A SPECIES of coluber, which is commonly called the chicken-snake in the southern parts of the United-States, of which it is a native, frequently climbs up the loftiest trees, in pursuit of young birds. One of my friends*, when he was in Georgia several years since, had an opportunity of seeing one of these snakes in a situation which furnishes a striking argument in favour of my opinion. The active reptile having seized upon a young martin† (which had left its nest for some days), upon a walnut-tree, at the height of about thirty feet, had not a little difficulty in swallowing the young bird. Having taken in the head first, as is commonly the case with our serpents, the bird

* The ingenious Mr. William Bartram.

† *Hirundo purpurca*.

made great resistance by the flapping of its wings, so that the serpent could only swallow the head and neck. Whilst the wings of the bird were in motion, numbers of the old martins, collecting together, flew about the snake, and attacked him with their bills. Here, as in the instance related by Mr. Rittenhouse, the old birds were actuated by the instinct of saving their young.

THE following facts were communicated to me by Mr. John Heckewelder. “In the summer of 1770,” says this gentleman, “while I was fishing under
“the bank of Leheigh*, I heard, for the
“space of near an hour, the sound of a
“ground-squirrel, seemingly in distress,
“on the top of the bank. At length, I
“went up to see what was the matter
“with the squirrel; when, to my utter
“astonishment, I discovered the animal
“about half way up a bush, but running
“sometimes higher up, sometimes
“lower down, and a very large rattle-

* The principal western branch of the Delaware, which runs by Bethlehem.

“ snake at the root of the bush, on which
 “ the squirrel was. Here I was imme-
 “ diately struck with the idea, that the
 “ snake was in the act of enchanting, and
 “ I hoped now to become fully convinced,
 “ that the rattle-snake obtained its prey
 “ altogether in this manner, as I had often
 “ heard reported. I, therefore, sat down
 “ quietly on a log, about six yards dis-
 “ tance, where I had a full view of
 “ both the snake and the squirrel. Some-
 “ times I thought the squirrel going
 “ down for the last time, and to enter
 “ the jaws of the snake; but it would
 “ again return up the bush, with the same
 “ liveliness it had run down. Finding,
 “ finally, no material alteration in the
 “ squirrel or its motions, and my pa-
 “ tience being exhausted, I determined
 “ on killing the snake, and examining into
 “ the case of the squirrel, viz. what
 “ strength, &c. it yet retained, after be-
 “ ing charmed for so long a time: for, by
 “ this time, the supposed charm had lasted
 “ near three hours. I struck at the snake
 “ with a long pole, but missed it; upon

“ which it ran down the bank, where I
 “ had been fishing. Remaining by the
 “ bush, on which the squirrel was, I
 “ hailed a man on the opposite side of the
 “ river, desiring him to cross in a canoe,
 “ and kill the snake under the bank. To
 “ which he immediately complied, but
 “ likewise missing his stroke, on account
 “ of the bushes, the snake took up the
 “ bank again, where I killed it. We now
 “ both joined to shake the squirrel down,
 “ but it had both sense and strength
 “ enough to climb to the very top, I
 “ suppose near twenty feet high. How-
 “ ever, we brought it down to the ground,
 “ and though it had fallen about two
 “ yards from the bush, it well knew its
 “ hole in which it dwelt, and this was at
 “ the root of the bush, *and exactly at the*
 “ *spot where the snake had lain.* Here the
 “ mystery was cleared up to us, at once.
 “ We conjectured, that the snake was
 “ either watching for the squirrel to come
 “ down, to enter its hole, or for its com-
 “ panion or young, which were probably
 “ in the hole, to come out, all which

“ were sufficient to cause anxiety in the
 “ squirrel on the bush. The dexterity,
 “ however, of the squirrel in making its
 “ way into the hole, and at the very
 “ place where we stood, showed plainly,
 “ that it retained its full strength and fa-
 “ gacity, and had by no means suffered
 “ from the charm of the snake*.”

“ A SIMILAR circumstance, to which I
 “ was also an eye-witness, happened,”
 says Mr. Heckewelder, “ in the year
 “ 1771, near Wyalusing, on Susquehanna ;
 “ where the cries of the chewink† drew
 “ my attention to the spot. The rattle-
 “ snake was just entering a heap of brush,
 “ in which the old ones had their nest
 “ with young. I supposed that one or the
 “ other of the old ones, with the young,
 “ would have become its prey, had I not
 “ approached and relieved them by kill-
 “ ing the snake‡.”

* Letter to me, dated Bethlehem, August 5th, 1796. Mr. Heckewelder has since informed me, that the snake, during the whole of the time he attended to it, never shook its rattle.

† The *Fringilla erythrophthalma* of Linnæus.

‡ Letter to me, dated August 5th, 1796.

THE following fact is similar to one which I have related in my memoir*.
 “ In the year 1762, at Tuscarawas on
 “ Muskingum, while going to fetch wa-
 “ ter out of the river, I observed,” says
 Mr. Heckewelder, “ a large black snake,
 “ running out on a long limb of a large
 “ tree, which stood on the water’s edge.
 “ This limb was nearly horizontal over,
 “ and about twelve feet above the level
 “ of, the water. I could not, at first,
 “ conceive what the snake aimed at, until
 “ near the end of this limb, I saw the
 “ the animal stretch downwards, where I
 “ observed a hanging† bird’s nest, pretty
 “ well concealed between some small
 “ boughs or leaves, into which the snake
 “ put its head, having strung its tail, with
 “ part of its body, round the limb above.
 “ Determined on killing the snake, if pos-
 “ sible, I ran to the house for my gun,
 “ and shot the reptile, which fell into the
 “ river, with a young bird in its jaws.”

* See pages 67 and 68.

† *Oriolus Baltimore* of Linnæus.

“ I AND another person once observed a
 “ snake of this kind, run up a tree pretty
 “ high, and put its head into a wood-
 “ pecker’s nest, where, as we supposed, it
 “ sucked the bird’s eggs, it being too ear-
 “ ly for the young birds to be hatched*.”

ON these facts I shall not trouble you with any comments, but shall proceed with my examination of Mr. Blumenbach’s *Remarks*.

AFTER quoting Mr. Michaëlis’s observations, which I have already noticed, Mr. Blumenbach has the following words:
 “ I would, however, add another mode
 “ of explanation from Dr. Barton’s work
 “ itself, where he assures us that the re-
 “ sult of his enquiries, whether the rattle-
 “ snake creeps up trees or not, induces
 “ him to believe the latter to be the case.
 “ The rattle-snake,” Mr. Blumenbach continues, “ is also one of the laziest of all
 “ the serpent tribe; under these circum-

* Letter already referred to.

“stances it seems very natural that such
 “a lazy animal should be endowed with
 “the fascinating power of bringing down
 “from trees small animals, which other-
 “wise would have nothing to fear from
 “a snake that cannot creep upwards.”

IT is true, as I have asserted, that the
 rattle-snake is one of the most sluggish spe-
 cies of serpents; and farther inquiries have
 confirmed me in my former opinion, that
 this serpent does not climb up trees. But
 if Mr. Blumenbach had recollected what I
 have so particularly said on the subject of
 the nidification of our birds*, he would
 not, I presume, have imagined, that it
 is at all necessary that the serpent should
 be endowed with “a fascinating power
 “of bringing down from trees small
 “animals.” I have shown, that the
 rattle-snake feeds upon bull-frogs, which
 are never found upon trees; upon the
 ground-squirrel, which is most commonly
 found upon the ground, and upon the

* A Memoir, &c. pages 50, 51, 52, 53.

fringilla erythrophthalma, or ground-robin, a species of finch, which receives its common English name from its being so generally seen upon the ground*. I may now add, that this reptile feeds upon young rabbits (*lepus americanus*), wild mice of different kinds, moles (*forex aquaticus*), and many other small animals, which it cannot have much trouble in obtaining, without its possessing the power of charming.

BUT although the rattle-snake is, in reality, a sluggish reptile, it is, nevertheless, an animal of more activity than Mr. Blumenbach seems to imagine. I believe it is true, as the old Indian† informed Mr. Heckewelder, that, in the spring season, these reptiles make considerable journeys from their dens, in search of food. I know it to be a fact, that they swim across streams of water, and even over large rivers. It is observed, by the hunters, and others, that the rattle-snake swims

* A Memoir, &c. pages 63 and 64.

† See page 31.

faster than it moves on the land. Indeed, it seems to run upon the surface of the water. It is very probable, that, in these watery peregrinations, it may occasionally have opportunities of catching certain kinds of fish. But this is a mere conjecture, which, at present, I am incapable of supporting by any decided fact.

I HAVE observed, in my memoir, that “ among the Indians of South-America, I “ do not find any traces of the notion that “ serpents can fascinate other animals.” Mr. Blumenbach, however, informs us, that Dobrishoffer asserts, in his history of the Abipons, “ that all the Spaniards and Indians in that part of Paraguay, unanimously ascribe a like property to the “ snake called *ampalabas*.” I also find, that Dr. Bancroft has mentioned the fascinating power of a large but innocuous species of serpent, which inhabits Guiana*.

* An Essay on the Natural History of Guiana, &c. p. 205. London: 1769. Mr. Stedman, a late writer, positively denies the existence of this fascinating power in the aboma, the serpent mentioned by Dr. Bancroft.

I WAS ignorant of these facts when I printed my memoir; and now that they are known to me, they do not appear to be of much consequence. They, certainly, do not prove, that serpents are endowed with the power of fascinating. It is not by any means ascertained, that the Abipons have not derived the notion from the Europeans, with whom they have been long acquainted.

SINCE the publication of my memoir, I have been able to make a more complete collection of the sentiments of the North-American Indians on the subject. I am led to believe, that it is far from being the general opinion, among these people, that the rattle-snake is endowed with the faculty of charming. I cannot in any other way so strikingly show the notions of the Indians on the subject, as by extracting part of a very curious manuscript, which I received from my friend Mr. John Heckewelder. “ Having questioned Indians, a number of times, with respect to snakes having the power of

“ charming, and always being answered
 “ in the negative, I was at length desired,”
 says Mr. Heckewelder, “ to give the rea-
 “ son, the white-people had for believing
 “ such a thing, which not being satisfacto-
 “ ry, Pemaholend* declared:” The rattle-
 “ snake obtains its food merely by flyness,
 “ and a persevering patience. It know-
 “ eth as well where to watch for its prey
 “ as a cat does, and succeeds as well. It
 “ has, and retains, its hunting grounds.
 “ In spring, when the warm weather sets
 “ in, and the woods seem alive with the
 “ smaller animals, it leaves its den. It
 “ will cross a river and go a mile and fur-
 “ ther from its den, to the place it in-
 “ tends to spend the summer, and in fall,
 “ when all the young animals bred this
 “ season are become strong and active, so
 “ that they are no more so easily over-
 “ taken or caught, it directs its course
 “ back again, to its den, the same as a
 “ hunter does to his camp.

“ THE white-people, continued Pema-
 “ holend, probably have taken the idea of

* An aged and much respected Delaware-Indian.

“ this snake having the power of charm-
 “ ing from a tradition of ours (the In-
 “ dians), which our forefathers have hand-
 “ ed down to us, from many hundred
 “ years back, and long before ever the
 “ white-people came into this country.
 “ Then (they tell us) there *was* such a
 “ snake, and a rattle-snake too, but then
 “ there was only *this one* snake which had
 “ this power, and he was afterwards de-
 “ stroyed; and since that time it hath
 “ never been said that any other of the
 “ kind had made its appearance.”

THE whole of this tradition, as related
 by Pemaholend, is in my possession. It is
 a very curious piece of American mytholo-
 gy, and will be published, at large, in ano-
 ther place, perhaps in my *Fragments of the*
Natural History of Pennsylvania. It is a new
 proof of my assertion, “that the mythology,
 “ or superstitious religion, of the Ameri-
 “ cans is a fragment of that mythology
 “ whose range in Asia, and in Africa, has
 “ been so extensive*.” But this tradition

* A Memoir, &c. p. 16. note.

is interesting in the discussion of the question in which I am now engaged. It plainly shows, that the Indians do not, in general, suppose, that the rattle-snake is gifted with the faculty of charming, and it renders it still more doubtful that the Whites derived this notion from the Indians.

THE Indians are so far from believing in the existence of this faculty in snakes, that the worthy gentleman from whom I received the tradition which I have just mentioned, assures me, that he would be unwilling, in future, to trouble them with any farther inquiries on the subject, as the sure reward of the pains of inquiring is a laugh at the easy credulity of the Whites. I may here add, what I have mentioned in my memoir, that Mr. William Bartram never understood that the nations of Indians, among whom he travelled, had any idea of the fascinating power of snakes*. Among other Indians, Mr. Bartram visited, with the zeal and knowledge of a natu-

* A Memoir, &c. page 14.

ralist, the nations of East and West Florida. As this ingenious and amiable gentleman believes, that serpents can charm other animals, there will be no suspicion, among candid people, that he has concealed the opinions of the Indians on the subject.

I THINK I have now considered every essential part of Mr. Blumenbach's remarks on my memoir. I have little doubt, that this illustrious professor, who is not less candid than he is learned and ingenious, will give to the new facts which I have adduced, all the consideration which they merit. What is the proportion of that consideration I must leave it with you and other able judges to decide. In the meanwhile, I am not a little flattered that one of my earliest essays in natural history has solicited so much of the attention of the philosophers of Europe.

You inform me, that my explanation of the supposed fascinating faculty of serpents is adopted by many of your natu-

ralists. This is pleasing to me. Indeed, such is our selfishness, that I fear I should have felt somewhat gratified to learn, that the theory had been adopted, though I myself had relinquished it. But I assure you, that, as yet, I have seen no cause to relinquish it. On the contrary, I possess a great body of additional facts in support of it. These facts will be carefully adduced in that part of my *Fragments* which is intended to comprize the history of the *amphibia* of Pennsylvania.

IN my native country, the explanation which I have offered has been adopted by many persons. But there are others who still believe in the existence of a true fascinating faculty in the rattle-snake, and other serpents. What change time and further attention to the subject may accomplish in them, I know not. But why should we expect to make all philosophers converts to our opinions? Almost every phenomenon, almost every fact in nature, *seems* to admit of an explanation upon more than one principle. The stream of

inquiry is often diverted, by trifling circumstances, into very opposite directions. Prejudices, or, to name them by a milder phrase, the earlier biases of our minds, frequently detain us, in the investigations of science, in a long and pleasing reign of tyranny. Our first love is said to be the strongest. Our first principles in science, in religion, and in politics, are often adhered to with the extreme of pertinacity. He who turned of fifty years of age relinquishes a favourite error, has infinitely more merit than the world may be willing to allow him.

I BEG you, Sir, to make what use of this letter you may think proper. If it shall add any thing to the stock of your knowledge on the subject, or if it shall serve to amuse you in an hour of leisure, I shall feel highly gratified.

Be assured that I am, with very great
respect, Dear Sir, your faithful and
obliged servant, and friend,

BENJAMIN SMITH BARTON.

POSTSCRIPT.

I BEGAN this long letter on the very day that I first saw Mr. Blumenbach's remarks in Tilloch's *Magazine*. I had not finished it before I received a copy of the original publication of the Professor. In the conclusion, I find he urges me to extend my inquiries into the real use of the *crepitaculum caudæ*, or rattle of the crotalus. This is, certainly, a question worthy of the attention of American naturalists, who enjoy the best opportunities of investigating the subject. I am, indeed, inclined to think that we are not yet acquainted with the real or exclusive use of the rattle of the crotalus. That it was given to this reptile to warn man and other animals of a dangerous enemy, does not appear a sufficient explanation of the use of the organ. Many serpents, whose poison is not less deleterious than that of the rattlesnake, are entirely destitute of any apparatus like the *crepitaculum* of this reptile. Besides, we have seen, that when most in-

tent upon obtaining his prey, the rattle-snake keeps his rattle still. This would seem to show, that it was not designed to terrify its enemies. Indeed, it is highly probable, that one reason why the rattle-snake so frequently succeeds in capturing animals is because he makes no noise, and therefore surprises his prey.

I do not doubt that the crepitaculum of the rattle-snake is an organ of very essential importance. But I must say, that it has always been deemed of more importance than it can yet be shown to be. Thus, it has been said to give an unerring indication of the age of the reptile. In this respect, it is a less sure criterion than has been generally imagined. It is a fact, which, I believe, has entirely escaped the notice of all the writers on the natural history of this reptile, that the rattles are formed before the exclusion of the young ones from the uterus. Towards the latter end of August, a number of female rattle-snakes were opened. The young animals were about five inches long, and

about the thickness of a small sized goose-quill: the scales were formed so as to be visible to the naked eye; the head very large, and the fangs, though of a somewhat gelatinous consistence, were shaped, and distinctly visible. The rattles were so far formed, that three bells could be plainly discerned; and this was the case in more than sixty instances. Hence, it is evident, that when they are excluded from the womb, the young animals have, at least, three rattles. After this, I believe they generally acquire two bells every year. Yet, in one instance, a rattle-snake* has been known to acquire four bells in the term of a year. I may add, that the bells are liable to be lost: they are sometimes broken, and it is not improbable, that they wear out.

I AM sometimes almost inclined to think, with your learned and eloquent countryman Mr. Herder, that “natural history
“has reaped no advantage from the
“philosophy of final causes.” And yet

* In the Museum of Mr. Peale.

without an inquiry into the ultimate intentions of nature, what is natural history? A barren waste of unconnected facts. Speculations, which too often, indeed, proceed from indolent philosophers, are necessary to render natural history an agreeable and even useful science. We are, moreover, sometimes able to discover the final cause or intention of nature, in her operations. And as to the *usus partium*, every philosopher must confess, that this is a question which ought never to be neglected. It is a kind of foul to the science of anatomy. It is exceedingly to be regretted, however, that we are so often at a loss to determine the uses of parts, even where the forms and structure of these parts are well known to us.---But let us not despair. Nature intends to reveal to us many things (precious in their kind), which are now entirely unknown to us. Physiology will, in time, assume one of the highest stations in the range of *sure* as well as splendid sciences.

